

REMARKS

Claims 1-15 are pending in the application.

Claims 1-7 have been rejected.

Claims 8 – 15 have been cancelled without prejudice.

Claims 1, 4, 6, and 7 have been amended, as indicated above, for reconsideration.

No new matter has been added.

Reconsideration of the Claims is respectfully requested.

The Applicant hereby rescinds any disclaimer of claim scope made in the sister application or any predecessor application in relation to the instant application. The Examiner is advised that any such previous disclaimer and the prior art that it was made to avoid, may need to be revisited. Further, the claims in the instant application may be broader than those of a sister application. Moreover, the Examiner should also be advised that any disclaimer made in the instant application should not be read into or against the sister application.

1. Election Requirement

Claims 8 through 15 had been withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Claims 8-15 have been cancelled without prejudice.

2. Rejection under 35 U.S.C. § 112, ¶ 2

Claims 1 – 7 were rejected under Section 112, ¶ 2.

An appropriate amendment is submitted herewith.

3. Rejection under 35 U.S.C. § 102

For establishing anticipation, “[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. . . . The identical invention must be shown in as complete detail as is contained in the . . . claim.” MPEP 2131 at p. 2100-67 (Rev. 6, Sept. 2007) (citations omitted).

Claims 1, 4 and 6 were rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,497,137 to Fujiki (“Fujiki”).

Claims 1, 4, 6, and 7 were rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,407,647, to Apel et al. ("Apel").

Fujiki relates to a "chip type transformer usable as a balun transformer in an impedance converter for converting the impedance of a transmission line of a high frequency circuit having a frequency higher than that of a UHF band . . ." (Fujiki Col. 1:8-12). Figure 2 of Fujiki illustrates a "first strip line 22 of a length $\lambda/2$ is formed on one main surface of the third dielectric substrate 14c which is the third layer from the top layer of the laminate 12. The first strip line 22 consists of a narrower first spiral portion 24a and a thicker second spiral portion 24b." (Fujiki Col. 4:18-22). As understood, Fujiki considers signal wavelength reflection as the consideration for the strip line lengths.

The Final Office Action submits that, without indication of angle, purpose, or desired effect, that "the winding of Fujiki includes corners that are shaped exactly the same way as the applicants." (Final Office Action at p. 5). But again, "[t]he fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish inherency of that result or characteristic." MPEP § 2112 at p. 2100-51.

Fujiki is silent to the purpose of the specific design of the spiral portions, *but for the length of the spirals corresponding to signal wavelength*. (see, e.g., Fujiki 7:44-47 ("the [strip lines] are set to a specific length, respectively.")). That is, Fujiki does not recite a method for manufacturing an on-chip inductor that includes geometric shaping of corners to achieve impedance reduction at an operating frequency and to provide negligible effects on inductance when at the operating frequency.

Apel relates to a transmission line element. (See, e.g., Apel claim 1). Similar to Fujiki, Apel is silent to the purpose of the specific design of the spiral portions, but for the length of the spirals corresponding to signal wavelength, presumably directed towards transmission reflection considerations. (see, e.g., Apel 3:48-51 ("the dimensions of element 10 are preferably such that each transmission line 12, 14 has an overall length that is less than or approximately equal to one-eighth of the signal wavelength.")).

Applicant's specification recites that the inductance value of an on-chip inductor is dependent on the length of the interior edge of the metalization (that is, the interior edge of winding 12) where the current tends to concentrate. (Specification at page 5, *ll.* 21 – 24). Further, to improve the quality factor of rectangular on-chip inductors and/or square on-chip inductors, current

turbulence within the metal track needs to be reduced. Such turbulence consumes power as resistive loss, but does not contribute to the inductive value. (Specification at page 6, *ll.* 5 - 12). Thus, by eliminating, or reducing current turbulence, by cutting the corners of winding 12, the resistive loss due to turbulence is reduced and the inductance value is not affected.

Accordingly, Applicant's Independent Claim 1, as amended, recites "a method for manufacturing an on-chip inductor comprises: creating a dielectric layer; and creating a conductive winding on the dielectric layer, wherein the conductive winding has a substantially square geometry, wherein corners of the conductive winding *are geometrically shaped to reduce impedance of the on-chip inductor at while an operating frequency and providing negligible effects on inductance of the on-chip inductor.*" (emphasis added).

Accordingly, Applicant respectfully submits that each and every element as set forth in Applicant's claimed invention is not found in Fujiki nor in Apel.

4. Rejection under 35 U.S.C. § 103(a)

In general, to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure.

Although the Supreme Court, in re-confirming the *Graham* factors, had admonished the use of the teaching-suggestion-motivation (TSM) test as an end of the obviousness inquiry, "[the Court] also recognized that [the teaching-suggestion-motivation (TSM) rationale] was one of a number of valid rationales that could be used to determine obviousness." MPEP § 2143 at 2100-118 (Rev. 6, Sept. 2007). Under this rationale, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Also, a finding is to be articulated that there was a reasonable expectation of success. MPEP § 2143 (G) at page 2100-138 (Rev. 6, Sept. 2007).

Further, all claim limitations must be considered. That is, “[a]ll words in a claim must be considered in judging the patentability of that claim against the prior art. If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious.” MPEP § 2143.03 at page 2100-142 (Rev. 6, Sept. 2007) (citations omitted).

Claims 2 and 3 were rejected under 35 U.S.C. 103(a) as being unpatentable over Apel

Claims 2 and 3 depend from Independent Claim 1. As Apel is respectfully submitted as not setting forth each and every element of Applicant’s claim 1, Applicant further respectfully submits that Apel does not must teach or suggest all the claim limitations of dependent Claims 2 and 3.

Applicant respectfully submits that the cited references do not convey the effect or desirability of creating geometric shaping of the corners. *See* MPEP § 2144.05 at p. 2100-134. As explained in the Specification, “the inductance value of an on-chip inductor is dependent on the length of the interior edge of the metallization (that is, the interior edge of winding 12) where the current tends to concentrate.” (Specification at p. 5, *ll.* 25-28).

Further, Applicant’s Specification further recites that to “improve the quality factor of rectangular on-chip inductors and/or square on-chip inductors, current turbulence within the metal track needs to be reduced. Such turbulence consumes power as resistive loss, but does not contribute to the inductive value. (Specification at p. 6, *ll.* 9-13). Thus, Applicant’s claimed invention provides for reducing the resistive loss caused by turbulence while not affecting the inductive value of the device.

Applicant’s dependent claim 2 recites that creating the conductive winding of Independent Claim 1 “further comprises: creating the geometric shaping of the corners to include an interior angle per corner of approximately ninety degrees, and an exterior angle per corner of approximately one hundred thirty-five degrees.”

Applicant’s dependent claim 3 recites that the creating of the conductive winding “further comprises: creating the geometric shaping of the corners to include an interior angle per corner of approximately one hundred thirty-five degrees, and an exterior angle per corner of approximately one hundred thirty-five degrees.”

Accordingly, Applicant respectfully submits that there has not been a *prima facie* showing that substantiates the rejection of Applicant's claimed invention. There is no suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify Apel to achieve Applicant's claimed invention as set out in dependent claims 2 and 3.

Applicant respectfully requests that the rejection to these claims be withdrawn.

5. Conclusion

As a result of the foregoing, the Applicant respectfully submits that Claims 1-7 in the Application are in condition for allowance, and respectfully requests allowance of such Claims.

If any issues arise, the Applicant respectfully invites the Examiner to contact the undersigned at the telephone number indicated below or at ksmith@texaspatents.com.

The Commissioner is hereby authorized to charge any additional fees connected with this communication or credit any overpayment to Garlick Harrison & Markison Deposit Account No. 50-2126.

Respectfully submitted,

Date: **April 28, 2008**

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